

Reactive Atom Plasma Processing of Slumped Glass Wedges, Phase I



Completed Technology Project (2008 - 2008)

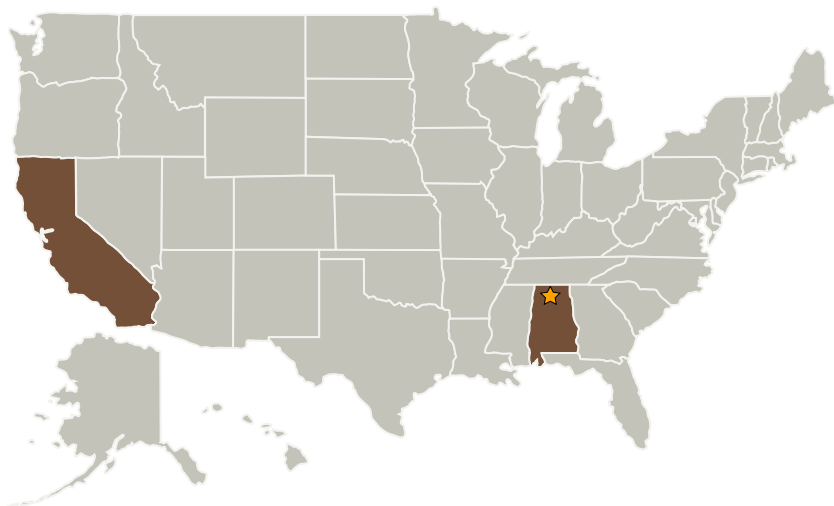
Project Introduction

The Reactive Atom Plasma (RAP

TM

) process will be evaluated as a rapid and practical method for fabricating precision wedges in glass sheets. The glass sheets are to be slumped using the same process as developed by NASA for the next generation of X-ray telescopes. The wedged sheets are to serve as alignment spacers for the multi-segmented grazing-incidence mirror design. RAP is possibly the only method capable of fabricating the wedge glass sheets within a viable process period and at a reasonable cost to validate the current alignment and assembly concept for the Constellation-X SXT telescopes. Conventional abrasive-based processes for fabricating the thousands of glass wedges required would consume enormous processing time which virtually invalidates the entire "Fabricate and Assemble" concept for the final telescope integration and assembly.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★ Marshall Space Flight Center (MSFC)	Lead Organization	NASA Center	Huntsville, Alabama
RAPT Industries, Inc.	Supporting Organization	Industry	Fremont, California



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Marshall Space Flight Center (MSFC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Primary U.S. Work Locations

Alabama

California

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Phil Sommer

Technology Areas

Primary:

- TX12 Materials, Structures, Mechanical Systems, and Manufacturing
 - └ TX12.4 Manufacturing
 - └ TX12.4.2 Intelligent Integrated Manufacturing